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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/484,259	01/18/00	COATES	D MERCK1883-C1

023599 TM02/0202  
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EXAMINER

MALINOWSKI, W

ART UNIT

PAPER NUMBER

2164

DATE MAILED:

02/02/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

<b>Office Action Summary</b>	<b>Application No.</b> 09/484,259	<b>Applicant(s)</b> COATES ET AL.	
	<b>Examiner</b> Walter Malinowski	<b>Art Unit</b> 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 November 2000.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 and 9-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 9-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

**Attachment(s)**

- |   |  |
|---|--|
| 15) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 18) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 16) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 19) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 17) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 20) <input type="checkbox"/> Other:  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1, 9, and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Kato et al. (Kato), U.S. Patent No. 5,745,205.

Kato discloses a liquid crystal film or layer with homeotropic alignment characterized in that the homeotropic alignment is achieved by an aligning layer on a substrate and that the aligning layer is an inorganic layer (col. 2, lines 55-65; col. 6, lines 10-53).

Claims 1, 9, and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Scherer et al. (Scherer), U.S. Patent No. 5,880,801.

Scherer discloses a liquid crystal film or layer with homeotropic alignment characterized in that the homeotropic alignment is achieved by an aligning layer on a substrate and that the aligning layer is an inorganic layer (col. 4, lines 44-60).

Claims 1, 9, and 10 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Ma et al., U.S. Patent No. 5,056,898.

***Claim Rejections - 35 USC § 103***

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scherer et al. (Scherer), U.S. Patent No. 5,880,801.

Scherer discloses a liquid crystal film or layer, but does not disclose the aluminum coating is a medium or high density coating.

Medium or high density coatings of aluminum are well known and, to produce good coverage by the aluminum, would have been obvious to use.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scherer or Kato.

Scherer or Kato disclose a liquid crystal film or layer, but do not disclose that the substrate is a plastic sheet or film.

Plastic sheets and films as substrates are well known in the liquid crystal display art and, to reduce breakage, would have been obvious to use.

Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scherer or Kato as applied to claims 1, 6, 9, and 10 above, and further in view of Ohnishi et al. (Ohnishi), U.S. Patent No. 5,601,884.

Scherer and Kato disclose a liquid crystal film or layer with homeotropic alignment, but do not disclose that the substrate is a polymeric material nor that the substrate prior to coating with the alignment layer or its precursor is subjected to a corona discharge.

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Ohnishi discloses substrates of polymeric material (col. 14, lines 41-48).

It would have been obvious to use a polymer substrate, as taught by Ohnishi, in the device of either Scherer and Kato to reduce breakage.

Ohnishi discloses "in case a polymer film is used as substrate, the polymer film or surface of the surface-treated polymer film may be further subjected to a treatment for increasing uniform film thickness of the film by a known surface reforming technique such as ... corona discharge" (col. 17, lines 16-23).

Therefore, it would have been obvious to use corona discharge, as taught by Ohnishi, in the device of either Scherer or Kato.

Claims 1 and 11-19 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Scherer et al. (Scherer), U.S. Patent No. 5,880,801.

Scherer discloses an aluminum oxide layer for homeotropic alignment of liquid crystal.

Alternatively, it would have been obvious to use  $Al_2O_3$  as the orientation layer material since this material is commonly used as the aluminum oxide material in liquid crystal display devices.

Transparent and opaque aluminum oxide layers are well known in the liquid crystal display arts, and, to optimize device performance, would have been obvious to use.

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Claims 1 and 11-19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Krueger et al. (Krueger), U.S. Patent No. 4,112,157.

Krueger discloses an aluminum oxide layer for homeotropic alignment of liquid crystal.

Alternatively, it would have been obvious to use  $Al_2O_5$  as the orientation layer material since this material is commonly used as the aluminum oxide material in liquid crystal display devices.

Transparent and opaque aluminum oxide layers are well known in the liquid crystal display arts, and, to optimize device performance, would have been obvious to use.

### ***Response to Arguments***

Applicant's arguments filed November 9, 2000, have been fully considered but they are not persuasive.

Because a limitation was presented in the disjunctive and because the cited references anticipated one of the alternatives as well as the required limitations, these references anticipated the claims as a whole.

For the newly added claims, newly cited references have been applied.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter Malinowski whose telephone number is (703) 308-3172. The examiner can normally be reached on M-F 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Sikes can be reached on (703) 308-4842. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7721 for regular communications and (703) 308-7721 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

*Walter Malinowski*  
**Walter J. Malinowski**  
**Primary Examiner**  
**Technology Center 2800**

wjm  
January 19, 2001